



Flight Opportunities

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Enjoy!
The Flight Opportunities team

Recent Flights



The Near Space Corporation launch team completes pre-flight rigging and checks at the Madras Municipal Airport in Madras, Oregon. Credits: Near Space Corporation

Big Goals, Small Package: Enabling Compact Deliveries from Space

Researchers from the University of Kentucky in Lexington have developed a delivery system called KRUPS designed to carry research samples and other small payloads from astronauts on the International Space Station back to Earth. Such delivery systems could aid NASA's efforts to gather data and test instruments in support of the agency's goal of **returning to the Moon**.

On April 15, 2021, researchers tested KRUPS in Madras, Oregon, on a high-altitude balloon from Near Space Corporation, made possible with funding from [Flight Opportunities](#). Rigged to Near Space's small balloon system, the 11-inch diameter KRUPS capsule achieved an altitude of approximately 100,000 feet. Researchers are now analyzing data gathered from the flight.

The balloon flight was an important preparatory step in advance of testing KRUPS as part of a space station commercial resupply mission later in 2021. To learn more, read the [full NASA web feature](#).

“The balloon flight made possible by Flight Opportunities was critical to prepare KRUPS for the testing on the station resupply flight. Testing our communication systems will ensure we get the thermal protection system data we need on a much higher risk orbital mission.”

—Alexandre Martin, principal investigator for KRUPS, University of Kentucky

Parabolic Flights Provide Relevant Environment for Testing Flight Opportunities-Supported Technologies

Parabolic flight campaigns provided by Zero Gravity Corporation in late April and early May 2021 provided a relevant testing environment for more than a dozen promising technologies supported by Flight Opportunities. To learn more about the flights:

- Read this NASA [web feature about how Air Squared leveraged Flight Opportunities](#) as an external investor for its Small Business Innovation Research Phase II — Extended award to help support parabolic flight testing for the company's vapor compression refrigeration system.
- Read this NASA [web feature, which spotlights the Ring Sheared Drop experiment](#) from NASA's Marshall Space Flight Center — an effort to study the formation of potentially destructive amyloid fibrils, or protein clusters, like those found in the brain tissue of patients battling neurodegenerative diseases.
- Check out [NASA Technology on Twitter](#) for more insights and photos from these two campaigns.

Community Learning

Make Plans to Attend our June Webinar

From the Mojave Desert to Jezero Crater: Lander Vision for NASA's Perseverance Rover

Wednesday, June 2, 2021

10:00 a.m.- 11:00 a.m. PDT

More details coming soon!

Lessons from the Launchpad:

Trusted Tips for Successful Flights

This month we're introducing a new regular column providing quick reminders, tips, and strategies to help our community of practice better prepare for successful testing of their payloads on suborbital flights. Gathered by our flight campaign managers as well as many researchers with extensive experience in the field, these recommendations will cover everything from flight prep fundamentals to easily overlooked planning steps to valuable lessons learned.

Get to Know Your PUG

This month's tip is all about making sure you fully understand your flight vehicle and the corresponding expected flight environment so that you can test your payload accordingly. One of the best tools at your disposal for doing so is the Payload User's Guide, or PUG. Your flight provider should give you a PUG specific to your flight vehicle.

- Use the PUG to understand the temperature, pressure, acceleration, shock, vibration, and other environmental variables that your payload may be exposed to – and be sure to successfully test your payload against these parameters before delivering it for integration and flight.
- Read up on the flight profile and available interfaces on the vehicle to help inform your payload design and concept of operations.
- If anything is unclear, reach out to your flight provider or Flight Opportunities campaign manager early on to get the information you need to design your payload appropriately for the flight vehicle.

Opportunities

Recently Announced

CASIS Releases Second ISS National Lab Research Announcement Focused on Technology Advancements

The Center for the Advancement of Science in Space (CASIS), manager of the International Space Station U.S. National Laboratory, has released a new research announcement soliciting flight concepts for technology advancement studies and applied research that would utilize the space-based environment of the orbiting laboratory. With this solicitation, Technology Advancement and Applied Research Leveraging the ISS National Lab: Cycle Two, CASIS seeks project concepts for investigations to be performed on the space station within the areas of applied research and development, translational medicine, technology readiness level maturation, and technology demonstration.

Step one (concept summaries) are due by end of day **May 24, 2021**.

Step two (full proposals from those invited to submit) are due by end of day **July 12, 2021**.

Learn more by reading the [full announcement from CASIS](#).

Upcoming

Coming Soon: Tech Flights 2021 Solicitation

The release of the Tech Flights 2021 solicitation is expected in early summer. In the meantime, check out our [Tips for Preparing Proposals for Suborbital Flight Testing webinar replay](#) to help guide your plans.

Coming Soon: Two New NASA Prize-Based Competitions

Flight Opportunities will also be initiating two new prize competitions in the coming weeks.

- **NASA TechLeap Prize:** an opportunity for technology developers to win a cash prize and have access to a suborbital flight opportunity by addressing a current NASA technology need
- **NASA TechRise Student Challenge:** an opportunity for students in grades 6-12 to develop technologies to be flown on suborbital vehicles

Keep an eye on this newsletter and our special announcement emails, as well as the [Flight Opportunities website](#) for official TechLeap, TechRise, and Tech Flights announcements.

Closing Soon

ISS National Lab Research Announcements for In-Space Production Applications

Step two (full proposals from those invited to submit) are due by end of day **June 22, 2021**. Learn more by reading the [full announcement from CASIS](#).

Events

Mark Your Calendars

[Commercial and Government Responsive Access to Space Technology Exchange \(CRASTE\) and National Space and Missile Materials Symposium \(NSMMS\)](#): June 21-25, 2021

Join Flight Opportunities Chief Technologist Stephan Ord for these virtual symposia bringing together technologists and decision makers from across the nation. Steve will share information with the community about the avenues for accessing flights through Flight Opportunities.

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Have ideas or feedback for the Flight Opportunities newsletter?

Drop us a line at:

NASA-FlightOpportunities@mail.nasa.gov

STAY CONNECTED:



NASA Flight Opportunities Program

(650) 604-5876 (Stephan Ord, Chief Technologist)

Flight Opportunities is part of NASA's Space Technology Mission Directorate.